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said thin film transistor comprising:

a semiconductor layer formed over said substrate having at least source, drain and channel regions and a capacitor forming portion;

a first insulating film adjacent to said channel region; and

a gate electrode adjacent to said channel region with said first insulating film interposed therebetween,

a storage capacitor electrically connected to said thin film transistor, said storage capacitor comprising:

said capacitor forming portion of the semiconductor layer;

a capacitor forming electrode adjacent to said capacitor forming portion wherein said capacitor forming electrode is formed from a same conductive layer as said gate electrode; and

a second insulating film interposed between said capacitor forming portion and said capacitor forming electrode,

wherein said first insulating film is thicker than said second insulating film.

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~~28.~~

A semiconductor device comprising:

a substrate;

at least one pixel electrode formed over said substrate;

at least one thin film transistor formed over said substrate for switching said pixel electrode, said thin film transistor comprising:

a semiconductor layer formed over said substrate having at least source, drain and channel regions and a capacitor forming portion;

a first insulating film formed on said channel region; and

a gate electrode formed over said channel region with said first insulating film interposed therebetween,

a storage capacitor electrically connected to said thin film transistor, said storage capacitor comprising:

said capacitor forming portion of the semiconductor layer;

a capacitor forming electrode formed over said capacitor forming portion; and

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a second insulating film interposed between said capacitor forming portion and said capacitor forming electrode,

wherein said first insulating film is thicker than said second insulating film.

<sup>20</sup>  
~~29~~. A semiconductor device comprising:

a substrate;

a semiconductor layer formed over said substrate, said semiconductor layer having at least a pair of impurity regions and a channel region extending therebetween and a capacitor forming portion;

a first insulating film formed adjacent to said channel region;

a second insulating film formed adjacent to said capacitor forming portion of the semiconductor layer, wherein said first insulating film is thicker than said second insulating film;

a gate electrode formed adjacent to said channel region with said first insulating film interposed therebetween;

a capacitor forming electrode formed adjacent to said capacitor forming portion of the semiconductor layer with said second insulating film to form a storage capacitor, wherein said capacitor forming electrode is formed from a same conductive layer as said gate electrode;

a third insulating film formed over said storage capacitor and said gate electrode;

an electrode formed on said third insulating film;

a fourth insulating film formed over said third insulating film and said electrode;

a black mask formed on said fourth insulating film;

a fifth insulating film formed over said fourth insulating film and said black mask; and

a pixel electrode formed on said fifth insulating film and electrically connected to one of said pair of impurity regions.

<sup>21</sup>  
~~30~~. A semiconductor device comprising:

a substrate;

a semiconductor layer formed over said substrate, said semiconductor layer having at least

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a pair of impurity regions and a channel region extending therebetween and a capacitor forming portion;

a first insulating film formed on said channel region;

a second insulating film formed on said capacitor forming portion of the semiconductor layer;

a gate electrode formed over said channel region with said first insulating film interposed therebetween;

a capacitor forming electrode formed over said capacitor forming portion of the semiconductor layer with said second insulating film to form a storage capacitor, wherein said first insulating film is thicker than said second insulating film;

a third insulating film formed over said storage capacitor and said gate electrode;

an electrode formed on said third insulating film;

a fourth insulating film formed over said third insulating film and said electrode;

a black mask formed on said fourth insulating film;

a fifth insulating film formed over said fourth insulating film and said black mask; and

a pixel electrode formed on said fifth insulating film and electrically connected to one of said pair of impurity regions.

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31. A semiconductor device comprising:  
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a substrate;  
a light shielding conductive layer formed over said substrate;  
at least one pixel electrode formed over said substrate;  
at least one thin film transistor formed over said substrate for switching said pixel electrode, said thin film transistor comprising:

a semiconductor layer having at least source, drain and channel regions and a capacitor forming portion, wherein at least said channel region is overlapped with said light shielding conductive layer;

a first insulating film formed on said channel region; and

a gate electrode formed over said channel region with said first insulating film interposed therebetween,

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a storage capacitor electrically connected to said thin film transistor, said storage capacitor comprising:

said capacitor forming portion of the semiconductor layer;  
a capacitor forming electrode formed over said capacitor forming portion; and  
a second insulating film interposed between said capacitor forming portion and said capacitor forming electrode,

wherein said second insulating film is thicker than said third insulating film.

23

22. A semiconductor device comprising:

a substrate;  
a light shielding conductive layer formed over said substrate;  
a first insulating film formed on said light shielding conductive layer;  
a semiconductor layer formed on said first insulating film, said semiconductor layer having at least a pair of impurity regions and a channel region extending therebetween and a capacitor forming portion, wherein at least said channel region is overlapped with said light shielding conductive layer;

a second insulating film formed on said channel region;  
a third insulating film formed on said capacitor forming portion of the semiconductor layer;  
a gate electrode formed over said channel region with said second insulating film interposed therebetween;

a capacitor forming electrode formed over said capacitor forming portion of the semiconductor layer with said third insulating film to form a storage capacitor, wherein said second insulating film is thicker than said third insulating film;

a fourth insulating film formed over said storage capacitor and said gate electrode;

an electrode formed on said fourth insulating film;

a fifth insulating film formed over said fourth insulating film and said electrode;

a black mask formed on said fifth insulating film;

a sixth insulating film formed over said fifth insulating film and said black mask; and

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BT 24. a pixel electrode formed on said sixth insulating film and electrically connected to one of said pair of impurity regions.

24  
33. A projector comprising:  
a light source; and  
a liquid crystal panel for modulating light from said light source, said liquid crystal panel comprising:

a substrate;  
at least one pixel electrode formed over said substrate;  
at least one thin film transistor formed over said substrate for switching said pixel electrode,  
said thin film transistor comprising:

a semiconductor layer formed over said substrate having at least source, drain and channel regions and a capacitor forming portion;

a first insulating film adjacent to said channel region; and

a gate electrode adjacent to said channel region with said first insulating film interposed therebetween,

a storage capacitor electrically connected to said thin film transistor, said storage capacitor comprising:

said capacitor forming portion of the semiconductor layer;

a capacitor forming electrode adjacent to said capacitor forming portion wherein said capacitor forming electrode is formed from a same conductive layer as said gate electrode; and

a second insulating film interposed between said capacitor forming portion and said capacitor forming electrode,

wherein said first insulating film is thicker than said second insulating film.

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34. A projector comprising:  
a light source; and  
a liquid crystal panel for modulating light from said light source, said liquid crystal panel comprising:

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a substrate;  
at least one pixel electrode formed over said substrate;  
at least one thin film transistor formed over said substrate for switching said pixel electrode,  
said thin film transistor comprising:  
a semiconductor layer formed over said substrate having at least source, drain and  
channel regions and a capacitor forming portion;  
a first insulating film formed on said channel region; and  
a gate electrode formed over said channel region with said first insulating film  
interposed therebetween,  
a storage capacitor electrically connected to said thin film transistor, said storage capacitor  
comprising:  
said capacitor forming portion of the semiconductor layer;  
a capacitor forming electrode formed over said capacitor forming portion; and  
a second insulating film interposed between said capacitor forming portion and said  
capacitor forming electrode,  
wherein said first insulating film is thicker than said second insulating film.

~~35~~<sup>26</sup>. A projector comprising:  
a light source; and  
a liquid crystal panel for modulating light from said light source, said liquid crystal panel  
comprising:  
a substrate;  
a semiconductor layer formed over said substrate, said semiconductor layer having at least  
a pair of impurity regions and a channel region extending therebetween and a capacitor forming  
portion;  
a first insulating film formed adjacent to said channel region;  
a second insulating film formed adjacent to said capacitor forming portion of the  
semiconductor layer, wherein said first insulating film is thicker than said second insulating film;  
a gate electrode formed adjacent to said channel region with said first insulating film

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interposed therebetween;

a capacitor forming electrode formed adjacent to said capacitor forming portion of the semiconductor layer with said second insulating film to form a storage capacitor, wherein said capacitor forming electrode is formed from a same conductive layer as said gate electrode;

a third insulating film formed over said storage capacitor and said gate electrode;

an electrode formed on said third insulating film;

a fourth insulating film formed over said third insulating film and said electrode;

a black mask formed on said fourth insulating film;

a fifth insulating film formed over said fourth insulating film and said black mask; and

a pixel electrode formed on said fifth insulating film and electrically connected to one of said pair of impurity regions.

27

26. A projector comprising:

a light source; and

a liquid crystal panel for modulating light from said light source, said liquid crystal panel comprising:

a substrate;

a semiconductor layer formed over said substrate, said semiconductor layer having at least a pair of impurity regions and a channel region extending therebetween and a capacitor forming portion;

a first insulating film formed on said channel region;

a second insulating film formed on said capacitor forming portion of the semiconductor layer;

a gate electrode formed over said channel region with said first insulating film interposed therebetween;

a capacitor forming electrode formed over said capacitor forming portion of the semiconductor layer with said second insulating film to form a storage capacitor, wherein said first insulating film is thicker than said second insulating film;

a third insulating film formed over said storage capacitor and said gate electrode;

an electrode formed on said third insulating film;

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a fourth insulating film formed over said third insulating film and said electrode;  
a black mask formed on said fourth insulating film;  
a fifth insulating film formed over said fourth insulating film and said black mask; and  
a pixel electrode formed on said fifth insulating film and electrically connected to one of said pair of impurity regions.

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37. A projector comprising:  
a light source; and  
a liquid crystal panel for modulating light from said light source, said liquid crystal panel comprising:  
a substrate;  
a light shielding conductive layer formed over said substrate;  
at least one pixel electrode formed over said substrate;  
at least one thin film transistor formed over said substrate for switching said pixel electrode, said thin film transistor comprising:  
a semiconductor layer having at least source, drain and channel regions and a capacitor forming portion, wherein at least said channel region is overlapped with said light shielding conductive layer;  
a first insulating film formed on said channel region; and  
a gate electrode formed over said channel region with said first insulating film interposed therebetween,  
a storage capacitor electrically connected to said thin film transistor, said storage capacitor comprising:  
said capacitor forming portion of the semiconductor layer;  
a capacitor forming electrode formed over said capacitor forming portion; and  
a second insulating film interposed between said capacitor forming portion and said capacitor forming electrode,  
wherein said second insulating film is thicker than said third insulating film.



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29  
28. A projector comprising:  
a light source; and  
a liquid crystal panel for modulating light from said light source, said liquid crystal panel comprising:  
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a substrate;  
a light shielding conductive layer formed over said substrate;  
a first insulating film formed on said light shielding conductive layer;  
a semiconductor layer formed on said first insulating film, said semiconductor layer having at least a pair of impurity regions and a channel region extending therebetween and a capacitor forming portion, wherein at least said channel region is overlapped with said light shielding conductive layer;  
a second insulating film formed on said channel region;  
a third insulating film formed on said capacitor forming portion of the semiconductor layer;  
a gate electrode formed over said channel region with said second insulating film interposed therebetween;  
a capacitor forming electrode formed over said capacitor forming portion of the semiconductor layer with said third insulating film to form a storage capacitor, wherein said second insulating film is thicker than said third insulating film;  
a fourth insulating film formed over said storage capacitor and said gate electrode;  
an electrode formed on said fourth insulating film;  
a fifth insulating film formed over said fourth insulating film and said electrode;  
a black mask formed on said fifth insulating film;  
a sixth insulating film formed over said fifth insulating film and said black mask; and  
a pixel electrode formed on said sixth insulating film and electrically connected to one of said pair of impurity regions.

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29. The semiconductor device according to claim 28, wherein a film thickness of said first insulating film is between 50 to 200 nm and a film thickness of said second insulating film is between 5 to 50 nm.

*correct*  
*51*  
<sup>31</sup>  
~~40~~. The semiconductor device according to claim <sup>19</sup>~~28~~, wherein a film thickness of said first insulating film is between 50 to 200 nm and a film thickness of said second insulating film is between 5 to 50 nm.

<sup>32</sup>  
~~41~~. The semiconductor device according to claim <sup>20</sup>~~29~~, wherein a film thickness of said first insulating film is between 50 to 200 nm and a film thickness of said second insulating film is between 5 to 50 nm.

<sup>33</sup>  
~~42~~. The semiconductor device according to claim <sup>21</sup>~~30~~, wherein a film thickness of said first insulating film is between 50 to 200 nm and a film thickness of said second insulating film is between 5 to 50 nm.

<sup>34</sup>  
~~43~~. The semiconductor device according to claim <sup>22</sup>~~31~~, wherein a film thickness of said first insulating film is between 50 to 200 nm and a film thickness of said second insulating film is between 5 to 50 nm.

<sup>35</sup>  
~~44~~. The semiconductor device according to Claim <sup>23</sup>~~32~~, wherein a film thickness of said second insulating film is between 50 to 200 nm and a film thickness of said third insulating film is between 5 to 50 nm.

<sup>36</sup>  
~~45~~. The projector according to claim <sup>24</sup>~~33~~, wherein a film thickness of said first insulating film is between 50 to 200 nm and a film thickness of said second insulating film is between 5 to 50 nm.

<sup>37</sup>  
~~46~~. The projector according to claim <sup>25</sup>~~34~~, wherein a film thickness of said first insulating film is between 50 to 200 nm and a film thickness of said second insulating film is between 5 to 50 nm.

<sup>38</sup>  
~~47~~. The projector according to claim <sup>26</sup>~~35~~, wherein a film thickness of said first insulating film is between 50 to 200 nm and a film thickness of said second insulating film is between 5 to 50 nm.

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<sup>39</sup>  
~~48~~. The projector according to claim <sup>27</sup>~~36~~, wherein a film thickness of said first insulating film is between 50 to 200 nm and a film thickness of said second insulating film is between 5 to 50 nm.

<sup>40</sup>  
~~49~~. The projector according to claim <sup>28</sup>~~37~~, wherein a film thickness of said first insulating film is between 50 to 200 nm and a film thickness of said second insulating film is between 5 to 50 nm.

<sup>41</sup>  
~~50~~. The projector according to Claim <sup>29</sup>~~38~~, wherein a film thickness of said second insulating film is between 50 to 200 nm and a film thickness of said third insulating film is between 5 to 50 nm.

<sup>42</sup>  
~~51~~. The semiconductor device according to Claim <sup>22</sup>~~31~~, wherein said light shielding conductive layer comprises a material selected from the group consisting of phosphorous doped silicon, boron doped silicon, tungsten, tantalum, molybdenum, titanium, metal silicide and metal nitrate.

<sup>43</sup>  
~~52~~. The semiconductor device according to Claim <sup>23</sup>~~32~~, wherein said light shielding conductive layer comprises a material selected from the group consisting of phosphorous doped silicon, boron doped silicon, tungsten, tantalum, molybdenum, titanium, metal silicide and metal nitrate.

<sup>44</sup>  
~~53~~. The projector according to Claim <sup>28</sup>~~37~~, wherein said light shielding conductive layer comprises a material selected from the group consisting of phosphorous doped silicon, boron doped silicon, tungsten, tantalum, molybdenum, titanium, metal silicide and metal nitrate.

<sup>45</sup>  
~~54~~. The projector according to Claim <sup>29</sup>~~38~~, wherein said light shielding conductive layer comprises a material selected from the group consisting of phosphorous doped silicon, boron doped silicon, tungsten, tantalum, molybdenum, titanium, metal silicide and metal nitrate.

<sup>46</sup>  
~~55~~. The semiconductor device according to Claim <sup>27</sup>~~31~~, wherein said light shielding conductive layer is floating.

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56. The semiconductor device according to Claim ~~32~~<sup>23</sup>, wherein said light shielding conductive layer is floating.

48  
57. The projector according to Claim ~~37~~<sup>28</sup>, wherein said light shielding conductive layer is floating.

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58. The projector according to Claim ~~38~~<sup>29</sup>, wherein said light shielding conductive layer is floating.

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59. The semiconductor device according to Claim ~~31~~<sup>22</sup>, wherein said light shielding conductive layer is electrically connected to a fixed potential.

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60. The semiconductor device according to Claim ~~32~~<sup>23</sup>, wherein said light shielding conductive layer is electrically connected to a fixed potential.

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61. The projector according to Claim ~~37~~<sup>28</sup>, wherein said light shielding conductive layer is electrically connected to a fixed potential.

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62. The projector according to Claim ~~38~~<sup>29</sup>, wherein said light shielding conductive layer is electrically connected to a fixed potential.

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63. An electronic device having the semiconductor device of claim ~~27~~<sup>18</sup>, wherein said electronic device is selected from the group consisting of a portable telephone, a video camera, a mobile computer, a goggle type display, a personal computer, an electronic game equipment, an image reproduction device, and a digital camera.

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64. An electronic device having the semiconductor device of claim ~~28~~<sup>19</sup>, wherein said electronic device is selected from the group consisting of a portable telephone, a video camera, a mobile computer, a goggle type display, a personal computer, an electronic game equipment, an image